[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0424; Project Identifier AD-2022-01575-A; Amendment 39-22368; AD 2023-04-20]

RIN 2120-AA64

Airworthiness Directives; Cirrus Design Corporation Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Cirrus Design Corporation (Cirrus) Model SF50 airplanes. This AD was prompted by reports of an accident and an incident due to uncommanded activation of the Cirrus Airframe Parachute System (CAPS) autopilot mode while in flight. This AD requires booting the avionics in configuration mode, inhibiting the CAPS autopilot, fabricating and installing information placards, revising the existing airplane flight manual (AFM) for your airplane, and revising the airworthiness limitations section (ALS) of the existing airplane maintenance manual (AMM) or Instructions for Continued Airworthiness (ICA) and your existing approved maintenance or inspection program, as applicable. For certain airplanes, this AD also requires modifying the wiring to remove the CAPS power timer functionality. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to regulations.gov. Follow the instructions for submitting comments.

• Fax: (202) 493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at regulations.gov by searching for and locating Docket No. FAA-2023-0424; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

• For service information identified in this final rule, contact Cirrus Design Corporation, 4515 Taylor Circle, Duluth, MN 55811; phone: (833) 735-0651; email: info@cirrusaircraft.com; website: cirrusaircraft.com.

• You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at regulations.gov by searching for and locating Docket No. FAA-2023-0424.

FOR FURTHER INFORMATION CONTACT: Joe Dubusky, Aviation Safety Engineer, Chicago ACO Branch, FAA, 2300 E Devon Avenue, Des Plaines, IL 60018; phone: (847) 294-7543; email: joseph.dubusky@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include

"Docket No. FAA-2023-0424 and Project Identifier AD-2022-01575-A" at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Joe Dubusky, Aviation Safety Engineer, Chicago ACO Branch, FAA, 2300 E Devon Avenue, Des Plaines, IL 60018. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA received a report that a Cirrus Model SF50 airplane was involved in an accident in which multiple flight control issues occurred after takeoff, causing the pilot to manually deploy the CAPS parachute. The FAA has no data showing the pilot received any crew alert system (CAS) messages indicating a CAPS autopilot malfunction. It was determined that the uncommanded activation of the CAPS autopilot mode contributed to the accident. It was also determined that corrosion in the CAPS power timer circuit (part

of the CAPS autopilot control mode circuit) may have provided an erroneous signal to the CAPS control box, inadvertently activating the CAPS autopilot mode. The FAA received several additional reports of corrosion on the CAPS power timer circuits on Cirrus Model SF50 airplanes.

The FAA also received a report of an autopilot auto-throttle malfunction on a Cirrus Model SF50 airplane that caused the airplane to pitch up during climb shortly after takeoff and required manual intervention by the pilot. This event, and the previously mentioned accident, occurred shortly after takeoff and at an altitude of less than 1,000 feet above ground level. The inadvertent activation of the CAPS autopilot mode introduces an uncommanded 30-degree pitch upward at a g-force of approximately 1.9g, which could cause the airplane to stall in a critical phase of flight if the autopilot is not disconnected.

This condition, if not addressed, could result in reduced ability of the flight crew to maintain safe flight and landing of the airplane. The FAA is issuing this AD to address the unsafe condition on these products.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Cirrus SF5X Service Bulletin SB5X-90-14R1, dated January 20, 2023. This service information specifies procedures for booting the avionics in configuration mode, inhibiting the CAPS autopilot, fabricating and installing information placards, and revising the AFM. For certain airplanes, the service information also provides procedures for modifying the wiring to remove the CAPS power timer functionality.

The FAA also reviewed the following temporary changes. These temporary changes provide revised CAPS procedures including interior placards, emergency procedures, emergency CAS procedures, and abnormal CAS procedures for affected AFMs part number (P/N) 31452-001 Revision A1 and P/N 31452-002 Revision 3.

• Cirrus Vision SF50 Airplane Flight Manual (AFM) Temporary Change TAFM 22-03, dated December 8, 2022, for AFM 31452-001 Revision A1.

• Cirrus Vision SF50 Airplane Flight Manual (AFM) Temporary Change TAFM 22-04, dated December 8, 2022, for AFM 31452-002 Revision 3.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

AD Requirements

This AD requires accomplishing the actions specified in the service information already described. This AD also requires revising the existing AFM for your airplane and revising the ALS of the existing AMM or ICA and your existing approved maintenance or inspection program, as applicable.

The owner/operator (pilot) holding at least a private pilot certificate may revise the existing AFM for your airplane and may revise the ALS of the existing AMM or ICA and your existing approved maintenance or inspection program, as applicable, and must enter compliance with the applicable paragraphs of this AD into the aircraft records in accordance with 14 CFR 43.9(a) and 14 CFR 91.417(a)(2)(v). The pilot may perform these actions because they only involve revising the existing AFM and the ALS of the existing AMM or the ICA and the existing approved maintenance or inspection program, as applicable. These actions could be performed equally well by a pilot or mechanic. This is an exception to the FAA's standard maintenance regulations.

Interim Action

The FAA considers this AD to be an interim action. The manufacturer is currently developing a modification that will address the unsafe condition identified in this AD. Once the modification is developed, approved, and available, the FAA might consider additional rulemaking.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for "good cause," finds that those procedures are "impracticable,

unnecessary, or contrary to the public interest." Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies foregoing notice and comment prior to adoption of this rule because of the possibility of uncommanded activation of the CAPS autopilot mode occurring while in flight without advanced warning. The inadvertent activation of the CAPS autopilot mode introduces an uncommanded 30-degree pitch upward at a g-force of approximately 1.9g, which could cause the airplane to stall in a critical phase of flight if the autopilot is not disconnected. If not addressed, the unsafe condition could result in reduced ability of the flight crew to maintain safe flight and landing of the airplane. The actions of inhibiting the CAPS autopilot mode and installing CAPS information placards must be accomplished within 25 hours time-in-service, which is approximately 2.5 months based on the average flight-hour utilization rates of these airplanes. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 365 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Boot avionics in configuration mode, set CAPS activated autopilot to inhibited state, and incorporate Temporary Revisions into AFM	1 work-hour x $85 per hour = $85	Not applicable	$85 initially and at each new software update/load	$31,025 initially
Fabricate and install information placards	1 work-hour x $85 per hour = $85	Not Applicable	$85	$31,025
Modify the wiring to remove CAPS power timer functionality on serial numbered airplanes 0005 - 0272	1.5 work-hours x $85 per hour = $127.50	Not Applicable	$127.50	The FAA has no data to determine the number of airplanes that might need this modification.
Modify the wiring to remove CAPS power timer functionality on serial numbered airplanes 0273 - 0409	.5 work-hour x $85 per hour = $42.50	Not Applicable	$42.50	The FAA has no data to determine the number of airplanes that might need this modification.
Revise the ALS of the existing AMM or ICA	1 work-hour x $85 per hour = $85	Not Applicable	$85	$31,025

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866, and

(2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-04-20 Cirrus Design Corporation: Amendment 39-22368; Docket No. FAA-2023-0424; Project Identifier AD-2022-01575-A.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

Cirrus Design Corporation (Cirrus) Model SF50 airplanes, all serial numbers, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC) Code: 2200, Auto Flight System.

(e) Unsafe Condition

This AD was prompted by reports of an accident and an incident due to uncommanded activation of the Cirrus Airframe Parachute System (CAPS) autopilot mode while in flight. The FAA is issuing this AD to address this unsafe condition. The unsafe condition, if not addressed, could result in the reduced ability of the flight crew to maintain safe flight and landing of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For serial numbers 0005 through 0409 inclusive, within 25 hours time-in-service (TIS) after the effective date of this AD: Do the actions in paragraphs (g)(1)(i) through (iii) of this AD, in accordance with steps A., B., and C., of the Accomplishment Instructions of Cirrus SF5X Service Bulletin SB5X-90-14R1, dated January 20, 2023 (Cirrus SB5X-90-14R1), as applicable to the serial number of your airplane.

(i) Boot avionics in configuration mode.

(ii) Set CAPS activated autopilot to inhibited state.

(iii) Fabricate and install information placards.

(2) For serial numbers 0005 through 0409 inclusive, within 25 hours TIS after the effective date of this AD: Revise the Emergency Procedures section of the existing airplane flight manual (AFM) for your airplane by inserting Cirrus Vision SF50 Airplane Flight Manual (AFM) Temporary Change TAFM 22-03, dated December 8, 2022, for AFM 31452-001 Revision A1; or Cirrus Vision SF50 Airplane Flight Manual (AFM) Temporary Change TAFM 22-04, dated December 8, 2022, for AFM 31452-002 Revision 3, as applicable to your airplane.

(3) For all serial numbers, within 25 hours TIS after the effective date of this AD: Revise the airworthiness limitations section (ALS) of the existing airplane maintenance manual (AMM) or Instructions for Continued Airworthiness and your existing approved maintenance or inspection program, as applicable to your airplane, by incorporating the language in figure 1 to paragraph (g)(3) of this AD. This action can be done by placing a copy of this AD in the ALS of the existing AMM for your airplane.

Figure 1 to paragraph (g)(3) – *Inhibit CAPS Autopilot Mode*

Inhibit CAPS Autopilot Mode
Anytime software is loaded/updated, verify CAPS Autopilot Mode is inhibited. Reference Cirrus Service Bulletin SB5X-90-14R1.

(4) For serial numbers 0005 through 0409 inclusive, the actions required by paragraph (g)(2) of this AD may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with the applicable paragraphs of this AD in accordance with 14 CFR 43.9(a) and 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

(5) For all serial numbers, the actions required by paragraph (g)(3) of this AD may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with the applicable paragraphs of this AD in accordance with 14 CFR 43.9(a) and 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

(6) For serial numbers 0005 through 0409 inclusive on which Field Modification FRA00019905 has not been done, within 25 hours TIS after the effective date of this AD: Modify the wiring to remove the CAPS power timer functionality in accordance with step D. of the Accomplishment Instructions of Cirrus SB5X-90-14R1.

(h) Credit for Previous Actions

You may take credit for the actions required by paragraph (g)(1) of this AD if you performed those actions before the effective date of this AD using Cirrus SF5X Service Bulletin SB5X-90-14, dated December 8, 2022.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Chicago ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

For more information about this AD, contact Joe Dubusky, Aviation Safety Engineer, Chicago ACO Branch, FAA, 2300 E Devon Avenue, Des Plaines, IL 60018; phone: (847) 294-7543; email: joseph.dubusky@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Cirrus SF5X Service Bulletin SB5X-90-14R1, dated January 20, 2023.

(ii) Cirrus Vision SF50 Airplane Flight Manual (AFM) Temporary Change TAFM 22-03, dated December 8, 2022, for AFM 31452-001 Revision A1.

(iii) Cirrus Vision SF50 Airplane Flight Manual (AFM) Temporary Change TAFM 22-04, dated December 8, 2022, for AFM 31452-002 Revision 3.

(3) For service information identified in this AD, contact Cirrus Design Corporation, 4515 Taylor Circle, Duluth, MN 55811; phone: (833) 735-0651; email: info@cirrusaircraft.com; website: cirrusaircraft.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on March 2, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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